Metal Film Chip Resistors, Rectangular Type

Type: **ERA**

■ Features

- Small size and lightweight
  PWB size reduction and lightweight products
- High reliability
  Low T.C.R & current noise, excellent non-linearity.
- Matching with placement machines
  Taping packagings for automatic placement machine
- Solderability
  Suitable for both reflow soldering and flow soldering
- Approved under the ISO-9001 system

■ Conforming to

IEC115-8, JIS C5223

■ Explanation of Part Numbers

1	2	3	4	5	6	7	8	9	10	11
E	R	A	3	Y	E	B	1	0	2	V

Product Code

Metal Film Chip Resistors

Power Rating

Code	Power Rating
3Y	1/16 W
6Y	1/10 W

Temperature Coefficient

Code	T.C.R
E	±25 ppm/°C
H	±50 ppm/°C
K	±100 ppm/°C

Resistance Tolerance

Code	Tolerance
B	±0.1 %
D	±0.5 %

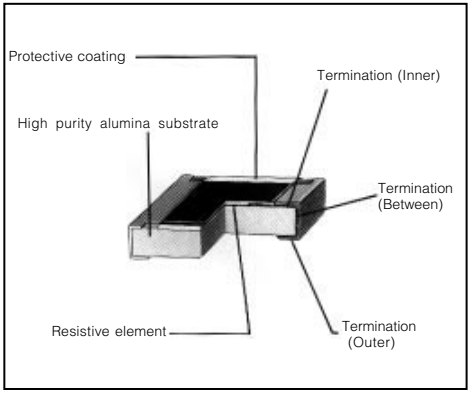
Nominal Resistance Value

The first two digits are significant figures of resistance and the third one denotes number of zero following.

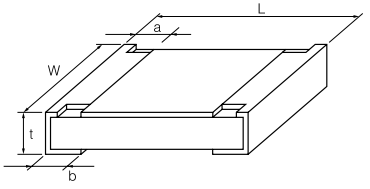
Suffix for Packaging

Code	Packaging
V	Std. Taped & reel

■ Construction



■ Dimensions in mm (not to scale)



Part No.	Dimensions (mm)					Net Weight (1000 pcs.)
	L	W	a	b	t	
ERA3Y	$1.60^{\pm0.20}$	$0.80^{\pm0.20}$	$0.30^{\pm0.20}$	$0.30^{\pm0.20}$	$0.45^{\pm0.10}$	2 g
ERA6Y	$2.00^{\pm0.20}$	$1.25^{\pm0.10}$	$0.40^{\pm0.25}$	$0.40^{\pm0.25}$	$0.50^{\pm0.10}$	4 g

■ Ratings

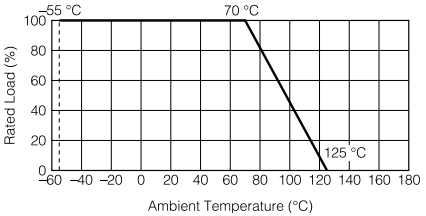
Part No.	Power Rating at 70 °C	Maximum RCWV*	Maximum Overload Voltage**	Resistance Tolerance (%)	Resistance Range (Ω)		T.C.R (ppm/°C)	Standard Resistance Values
					min.	max.		
ERA3Y	1/16 W	75 V	150 V	±0.5	10	91	±50	E-24
					100	33 K	±25	
					36 K	330 K	±100	
				±0.1	100	33 K	±25	
ERA6Y	1/10 W	100 V	200 V	±0.5	10	91	±50	E-24
					100	100 K	±25	
					110 K	1 M	±100	
				±0.1	100	100 K	±25	

* Rated Continuous Working Voltage (RCWV) shall be determined from RCWV=$\sqrt{\text{Rated Power} \times \text{Resistance Value}}$, or max. RCWV listed above, whichever less.

** Short-time Overload Test Voltage (SOTV) shall be determined from SOTV=2.5 × Power Rating or max. Overload Voltage listed above whichever less.

Power Derating Curve

For resistors operated in ambient temperatures above 70 °C, power rating must be derated in accordance with the curve right.

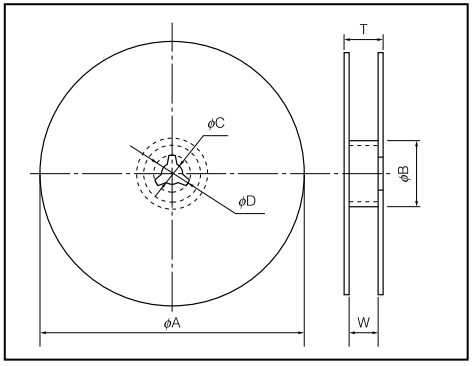


■ Packaging Methods

● Standard Quantity

Type	Thickness	Paper Taping
ERA3Y	0.45 mm	5000 pcs./reel
ERA6Y	0.50 mm	5000 pcs./reel

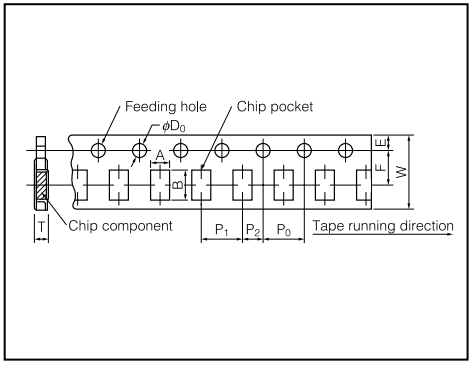
● Taping Reel



Dimensions (mm)	Type	φA	φB	φC
	3Y	$180.0^{+0}_{-3.0}$	60 min.	$13.0^{\pm1.0}$
	6Y			

Dimensions (mm)	Type	W	T
	3Y	$9^{\pm1.0}$	$11.4^{\pm1.0}$
	6Y		

● Paper Taping

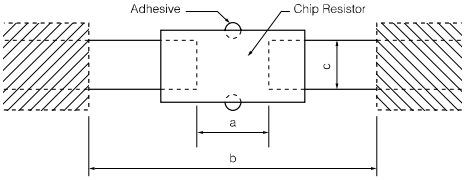


Dimensions (mm)	Type	A	B	W	F	E
	3Y	$1.10^{\pm0.10}$	$1.90^{\pm0.10}$	$8.00^{\pm0.20}$	$3.50^{\pm0.05}$	$1.75^{\pm0.10}$
	6Y	$1.65^{\pm0.15}$	$2.50^{\pm0.20}$			

Dimensions (mm)	Type	P_1	P_2	P_0	ϕD_0	T
	3Y	$4.00^{\pm0.10}$	$2.00^{\pm0.05}$	$4.00^{\pm0.10}$	$1.50^{+0.10}_{-0}$	$0.64^{\pm0.05}$
	6Y					$0.84^{\pm0.05}$

⚠Safety Precautions

In the case of reflow soldering, the land width must be smaller than the Chip Resistor width to properly control the solder amount properly. Generally, the land width should be chip resistor width (W) 0.7 to 0.8 times of the width of chip resistor. In the case of reflow soldering, solder amount can be adjusted, there or the land width should be set to 1.0 to 1.3 times chip resistor width (W).



Part No.	Dimensions (mm)		
	a	b	c
ERA3Y	0.7 to 0.9	2.0 to 2.2	0.8 to 1.0
ERA6Y	1.0 to 1.4	3.2 to 3.8	0.9 to 1.4

1. Rated Power and Ambient Temperature
   Keep the rated power and ambient temperature within the specified derating curve.
   * Place and fit resistors and other heating components on board, taping into consideration of temperature rise due to approaching of these components with each other.
2. External Shock
   Mechanical shock during automatic mounting or handling of board after chip being mounted may cause break, flaw or fall-off of paint film of resistor that may impair initial characteristics.
   Avoid nipping of resistor with hard tool (a pair of pliers or tweezers) as it may damage protective film or electrode of resistor and may affect resistor's performance.
3. Application of Pulse
   When pulse is applied to a resistor, the peak value of the pulse shall be within rated value.
4. The resistor is neither non-combustible nor flame-retardant.
5. When soldering with soldering iron, never touch the body of the chip resistor with a tip of the soldering iron. When using a soldering iron with a tip at high temperature, solder for a time as short as possible (three seconds or less up to 350 °C).
6. Avoid immersion of chip resistor in solvent for a long time. Use solvent after the effect of immersion is confirmed.
7. Do not use the product in dewy atmospheres.